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**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of

Docket No: Q88645

Yoshiyuki FUKUMOTO, et al.

Appln. No.: 10/539,373

Group Art Unit: Not Yet Assigned

Confirmation No.: Not Yet Assigned

Examiner: Not Yet Assigned

Filed: June 16, 2005

For: MAGNETO-RESISTANCE DEVICE AND METHOD OF MANUFACTURING THE SAME

**INFORMATION DISCLOSURE STATEMENT**  
**UNDER 37 C.F.R. §§ 1.97 and 1.98**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure under 37 C.F.R. § 1.56, Applicant hereby notifies the U.S. Patent and Trademark Office of the documents which are listed on the attached PTO/SB/08 A & B (modified) form and listed herein and which the Examiner may deem material to patentability of the claims of the above-identified application.

1. Japanese Patent Application Publication No. 10-65232, published March 6, 1998.
2. Japanese Patent Application Publication No. 2002-74627, published March 15, 2002.
3. K. Matsuda et al.; "Reduced magnetoresistance in magnetic tunnel junctions caused by geometrical artifacts"; Applied Physics Letters; Vol. 77, No. 19; November 6, 2000; pages 3060-3062.
4. J. S. Moodera et al.; "Geometrically enhanced magnetoresistance in ferromagnet-insulator-ferromagnet tunnel junctions"; Applied Physics Letters; Vol. 69, No. 5; July 29, 1996; pages 708-710.
5. S. Ohnuma et al.; "Soft Magnetic Films with High Electrical Resistivity"; Journal of the Magnetism Society of Japan; Vol. 19, No. 1; 1995; pages 19-25; with English Abstract.

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INFORMATION DISCLOSURE STATEMENT

U.S. Appln. No.: 10/539,373

Atty. Docket No.: Q88645

One copy of each of the listed documents is submitted herewith.


The present Information Disclosure Statement is being filed: (1) No later than three months from the application's filing date; (2) Before the mailing date of the first Office Action on the merits (whichever is later); or (3) Before the mailing date of the first Office Action after filing a request for continued examination (RCE) under §1.114, and therefore, no Statement under 37 C.F.R. § 1.97(e) or fee under 37 C.F.R. § 1.17(p) is required.

In compliance with the concise explanation requirement under 37 C.F.R. § 1.98(a)(3) for foreign language documents, Applicant states that above references 1-5 are discussed within the specification of co-pending U.S. Application No. 10/697,124, beginning at page 4, line 16, page 5, line 1, page 7, lines 22 and 27, and page 8, line 5, respectively.

The submission of the listed documents is not intended as an admission that any such document constitutes prior art against the claims of the present application. Applicant does not waive any right to take any action that would be appropriate to antedate or otherwise remove any listed document as a competent reference against the claims of the present application.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A duplicate copy of this paper is attached.

Respectfully submitted,

  
Howard L. Bernstein  
Registration No. 25,665

SUGHRUE MION, PLLC  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

WASHINGTON OFFICE

**23373**

CUSTOMER NUMBER

Date: December 7, 2005

Substitute for Form 1449 A & B/PTO			<b>Complete if Known</b>	
			Application Number	10/539,373
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(use as many sheets as necessary)</i>			Confirmation Number	Not Yet Assigned
			Filing Date	June 16, 2005
			First Named Inventor	Yoshiyuki FUKUMOTO
			Art Unit	Not Yet Assigned
			Examiner Name	Not Yet Assigned
			Attorney Docket Number	Q88645
Sheet	1	of		

## U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
		Number	Kind Code <sup>2</sup> (if known)		
		US			
		US			
		US			
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		US			
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		US			
		US			

## FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Translation <sup>6</sup>
		Country Code <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)			
		JP	10-65232	A	03-06-1998		
		JP	2002-74627	A	03-15-2002		

## NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city, and/or country where published.	Translation <sup>6</sup>
		K. Matsuda et al.; "Reduced magnetoresistance in magnetic tunnel junctions caused by geometrical artifacts"; Applied Physics Letters; Vol. 77, No. 19; November 6, 2000; pages 3060-3062.	
		J. S. Moodera et al.; "Geometrically enhanced magnetoresistance in ferromagnet-insulator-ferromagnet tunnel junctions"; Applied Physics Letters; Vol. 69, No. 5; July 29, 1996; pages 708-710.	
		S. Ohnuma et al.; "Soft Magnetic Films with High Electrical Resistivity"; Journal of the Magnetics Society of Japan; Vol. 19, No. 1; 1995; pages 19-25; with English Abstract.	

Examiner Signature		Date Considered	
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kind Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov), MPEP 901.04 or in the comment box of this document. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST. 3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to indicate here if English language Translation is attached.

Substitute for Form 1449 A & B/PTO  <b><u>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</u></b>  <i>(use as many sheets as necessary)</i>				<i>Complete if Known</i>	
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Examiner Initials*	Cite No. <sup>1</sup>	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
		Number	Kind Code <sup>2</sup> (if known)		
		US 2002/0044396	A1	04-18-2002	Amano et al.
		US 2004/0145850	A1	07-29-2004	Fukumoto et al.
		US			
		US			
		US			

FOREIGN PATENT DOCUMENTS							
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Translation <sup>6</sup>
		Country Code <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> <i>(if known)</i>			
		JP	2000-20922	A	01-21-2000		
		EP	1033764	A2	09-06-2000		
		JP	62-132211	A	06-15-1987		
		JP	3-268216	A	11-28-1991		
		EP	1202357	A2	05-02-2002		
		JP	2002-329903	A	11-15-2002		
		JP	2003-273420	A	09-26-2003		

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city, and/or country where published.	Translation <sup>6</sup>
		"Applied Physics Letters (Vol. 78, May 7, 2001, pp. 2911-2913)(the second conventional example), Zongzhi Zhang, et al..	
		J.J. Sun et al., Low resistance and high terminal stability of spin-dependent tunnel junctions with synthetic antiferromagnetic CoFe/Ru/CoFe pinned layers, Applied Physics Letters (Vol. 76, April 24, 2000, pp. 2424-2426).	
		S. Cardoso et al., Influence of Ta antidiffusion barriers on the thermal stability of tunnel junctions, Applied Physics Letters (Vol. 76, June 19, 2000, pp. 3792-3794).	
		T. Ochiai et al., Improved Thermal Stability of Ferromagnetic Tunnel Junctions With a CoFe/CoFeOx/CoFe Pinned Layer, IEEE Transactions on Magnetics, (Vol. 39, September, 2003, pp. 2797-2799).	

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